

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

HENK MOSSEVELD et al.

Serial No.: 10/551,109

Filed: June 29, 2006

For: USE OF POLYMERS SFOR STARCH MODIFICATION

Attorney Docket No.: WAS 0726 PUSA

Group Art Unit: 1796

Examiner: Karuna P. Reddy

**RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF**

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Sir:

This is a timely response to the Notification of Non-Compliant Appeal Brief dated September 15, 2010, hereinafter "the Non-Compliant Notification."

### **VIII. CLAIMS APPENDIX**

20. A starch molding composition comprising optionally modified starch combined with redispersible powder of at least one polymer stabilized with protective colloid(s) and/or emulsifier(s), said polymer comprising one or more comonomer units selected from the group consisting of vinyl esters of straight-chain and branched alkylcarboxylic acids having 1 to 18 carbon atoms, acrylates and methacrylates of branched and straight-chain alcohols having 1 to 15 carbon atoms, dienes, vinylaromatics and vinyl halides, and further comprising from 0.1 to 20.0% by weight, based on the total weight of the polymer, of at least one functional comonomer selected from the group consisting of carboxyl-, hydroxyl-, epoxy- and NH-functional ethylenically unsaturated comonomers, hydroxyalkyl methacrylates wherein the alkyl moiety of the hydroxyalkyl group is a C<sub>1</sub>- to C<sub>8</sub>-alkyl radical, and optionally, olefin comonomer(s), wherein the redispersible powder of the at least one polymer is of an amount of from 5 to 60% by weight based on the total weight of the starch.

21. The starch molding composition of claim 20 wherein the one or more comonomer units are selected from the group consisting of vinyl esters of straight-chain or branched carboxylic acids having 1 to 18 carbon atoms.

22. The starch molding composition of claim 20, wherein the at least one functional comonomer includes N-alkylol-functional comonomer units having a C<sub>1</sub>- to C<sub>4</sub>-alkylol radical.

23. The starch molding composition of claim 20, wherein the at least one functional comonomer is selected from the group consisting of N-methylolacrylamide (NMA), N-methylolmethacrylamide, N-methylolallylcarbamate, C<sub>1</sub>- to C<sub>4</sub>-alkyl ethers of N-methylolacrylamide, N-methylolmethacrylamide and N-methylolallylcarbamate, and C<sub>1</sub>- to C<sub>4</sub>-alkyl esters of N-methylolacrylamide, N-methylolmethacrylamide and N-methylolallylcarbamate.

24. The starch molding composition of claim 20, wherein the polymer is vinyl acetate polymer, vinyl acetate/ethylene copolymer, vinyl acetate/ethylene/vinyl chloride copolymer or vinyl ester/acrylate copolymer, each further containing said functional comonomer.

25. The starch molding composition of claim 20, wherein the polymer has a glass transition temperature of from  $-30^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ .

26. The starch molding composition of claim 20, wherein the protective colloid(s) are provided in an amount of from 1 to 30% by weight, based on the total weight of the polymer.

27. The starch molding composition of claim 20, wherein the protective colloid(s) are selected from the group consisting of polyvinyl alcohols, polyvinyl acetals, polyvinylpyrrolidones, celluloses, cellulose derivatives, poly(meth)acrylic acid, copolymers of (meth)acrylates with carboxy-functional comonomer units, poly(meth)acrylamide, polyvinylsulfonic acids and copolymers thereof, melamineformaldehydesulfonates, naphthaleneformaldehydesulfonates, styrene/maleic acid copolymers, vinyl ether/maleic acid copolymers, starch, and dextrans.

28. The starch molding composition of claim 27, wherein the protective colloids are polyvinyl alcohols having a degree of hydrolysis of from 85 to 94 mol% and a Höppler viscosity, in 4% strength aqueous solution, of from 3 to 15 mPa·s at  $20^{\circ}\text{C}$  according to DIN 53015.

29. The starch molding composition of claim 20, wherein the optionally modified starch is in natural form, as destructured starch, as chemically modified starch, or a mixture thereof.

30. The starch molding composition of claim 20 is an adhesive.

31. A starch molding composition of claim 20, prepared by a molding process of extrusion, extrusion blow molding, foam extrusion, injection molding, calendering or thermoforming.

32. The starch molding composition of claim 31 further comprising biodegradable polyester as a binder.

33. The starch molding composition of claim 31 further comprising cellulose fractions in the form of wood particles, wood fibers and woodmeal.

34. The starch molding composition of claim 31 provided as a rotable molding.

35. The starch molding composition of claim 31 provided as a rotable film.

36. A process for producing a starch molding from the starch molding composition of claim 20, comprising:

providing starch, mixing said at least one polymer with said starch, and molding at a temperature of from 70°C to 150°C.

37. The process of claim 36, wherein water is present prior to molding.

38. The process of claim 36, wherein a wood product selected from the group consisting of wood particles, wood fibers, wood meal, and mixtures thereof are present prior to molding.

39. A starch molded article comprising optionally modified starch combined with redispersible powder of at least one polymer stabilized with protective colloid(s) and/or emulsifier(s), said polymer comprising one or more comonomer units selected from the group consisting of vinyl esters of straight-chain and branched alkylcarboxylic acids having 1 to 18 carbon atoms, acrylates and methacrylates of branched and straight-chain alcohols having 1 to

15 carbon atoms, dienes, vinylaromatics and vinyl halides, and further comprising from 0.1 to 20.0% by weight, based on the total weight of the polymer, of at least one functional N-methylol comonomer, wherein the redispersible powder of the at least one polymer is provided in an amount of from 5 to 60% by weight based on the total weight of the starch.

### **Remarks**

In the Non-Compliant Notification, it is stated that the Appeal Brief of September 10, 2010 does not contain a correct copy of the appealed claims.

The Claims Appendix has been corrected accordingly such that claims stated are consistent with the text of the claims last entered on October 22, 2009. No other changes are made in this section. This corrected Claims Appendix is to replace the Claims Appendix submitted on September 10, 2010, pursuant to the Non-Compliant Notification and 37 C.F.R. § 41.37.

The Examiner is invited to call Appellants' attorney if it would advance the prosecution of this application. Please charge any fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

Respectfully submitted,

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